CABLE SEC DISSEM

PERSON/UNIT NOTIFIED

ADMIN INTERNAL USE ONLY

ADVANCE COPY ISSUED/SLOTTED BY AT Z

ACTION UNIT

ACTION #

INFO

FILE NR STATSPEC

STATE MESSAGE

1		4	
2		5	
3		6	

T 160211 EIA034 PAGE 01 NC 48159

TOR:031942Z JUN 74

P 031536Z JUN 74
FM AMEMBASSY MOSCOW
TO SECSTATE WASHDC PRIORITY 9384
BT
UNCLAS MOSCOW 8345
FOR SCI
E.O. 11652: N/A
TAGS: TGEN OTRA UR US
SUBJ: US-USSR S&T AGREEMENT: MICROBIOLOGY WORKING GROUP
REF: A. STATE 10010; B. STATE 114949
1. EMBASSY MAY 31 RECEIVED SHENDEREY-LEISE LETTER WITH COMPOSITION OF SOVIET DELEGATION AND SOVIET PROGRAM REQUESTS.
2. SOVIET GROUP WILL BE AS FOLLOWS:
YE. SHENDEREY, HEAD OF DELEGATION;
I. BEREZIN, MOSCOW STATE UNIVERSITY;
SH. YENIKEYEV, KAZAN TECHNOLOGICAL INSTITUTE;
V. SEREGIN, GLAVMIKROBIOPROM;
V. SUKHODOLETS, ALL-UNION SCI-RES. INST. OF GENETICS;
L. MEL'NIKOV, ALL-UNION SCI.- RES. INST. OF PROTEIN SYNTHESIS.
3. DELEGATION WILL ARRIVE JUNE 9 FOR NINE-DAY VISIT.
4. DELEGATION WISHES TO VISIT FOLLOWING COMPANIES AND INSTITUTIONS AND REQUESTS US SIDE'S ASSISTANCE IN ARRANGING VISITS:
USDA AGRICULTURAL RESEARCH STATION, BELTSVILLE;
ROCKEFELLER UNIVERSITY, LABORATORY OF DRS. HOTCHKISS, TATUM AND SCOTT;
NEW YORK UNIVERSITY, LABORATORY OF DR. MOSS;
CORNING GLASS WORKS, NEW YORK;
PFEISER CORP., NEW YORK;
EXXON CORP., LINDEN, NEW JERSEY;
WASHINGTON (WORTHINGTON?) BIOCHEMICAL CORP;
FERMENTATION PLANT, NEW JERSEY;
MERCK CORP., RAHWAY, NEW JERSEY;
GULF OIL, PITTSBURGH, PILOT AND SEMI-INDUSTRIAL FACILITIES FOR PROTEIN PRODUCTION;
UNIVERSITY OF PITTSBURGH, LABORATORY OF DR. L. VINGARD;
INSTITUTE OF GAS TECHNOLOGY, CHICAGO, FACILITIES FOR OBTAINING PROTEIN FROM GAS;

ADMIN INTERNAL USE ONLY

CABLE SEC DISSEM BY ... TOR: ...

PERSON/UNIT NOTIFIED

ADMIN INTERNAL USE ONLY

REPRODUCTION BY OTHER TH... ISSUING OFFICE IS PROHIBITE...

ADVANCE COPY ISSUED/SLOTTED ... BY ... AT ... Z

ACTION UNIT

ACTION #

INFO RF. FILE VR .

STATE MESSAGE

1		4	
2		5	
3		6	

T 160211 EIA034 PAGE 02-02 NC 48159

TOR:231942Z JUN 74

NORTHERN ILLINOIS GAS COMPANY, CHICAGO;
KANSAS STATE UNIVERSITY, KANSAS CITY;
M.I.T.;
GENERAL ELECTRIC CO., NEW YORK, FACILITIES FOR OBTAINING PROTEIN FROM SECONDARY RAW MATERIALS.
5. SOVIET SIDE AGREES TO HOLDING JOINT MEETING JUNE 10-12 DURING WHICH TIME BASIC DOCUMENTS OF MEETING COULD BE WORKED OUT AND AGREED UPON. FOLLOWING JOINT MEETING, DELEGATION WISHES TO VISIT ABOVE FIRMS AND LABORATIRIES AND ANTICIPATES THE US SIDE'S ASSISTANCE IN ARRANGING THESE VISITS.
6. SINCE RECEIPT OF ABOVE INFORMATION, EMBASSY HAD RECEIVED REF. B CONTAINING TENTATIVE PROGRAM FOR DELEGATION. AS THIS PROGRAM DIFFERS FROM THAT PROPOSED BY SHENDEREY, EMBASSY WILL NOTE, WHEN TRANSMITTING US SUDE'S PROPOSED PROGRAM, THAT TIME LIMITATIONS WILL PROBABLY PRECLUDE ARRANGING SPECIFIC PROGRAM DESIRED BY SOVIET SIDE. SCST AND SHENEDEREY ARE AWARE OF URGENCY WHICH WAS ATTACHED TO RECEIVING SOVIET PROPOSALS AT MUCH EARLIER DATE AND THEREFORE CANNOT EXPECT TO HAVE THEIR PROPOSALS ACCEPTED AT THE VERY LAST MINUTE.
7. PLEASE ADVISE IF PROGRAM IN REF. B WILL BE ALTERED TO TAKE INTO ACCOUNT ANY OF THE DIFFERENT SOVIET PROGRAM DESIRES. STOESSEL

ADMIN INTERNAL USE ONLY

Date: 4 June 1974

To: SCA/VO/SPLEX — E. Harris

From: EUR/SES — R. Pardon

EUR/SES recommends issuance of visa(s) to the alien(s) listed in para(s) 3 through 8,

EUR/SES recommends the admission of the alien(s) although name checks have not been completed.

R. Pardon

EUR/SES Case Officer

3 June 74

1. Ma MS MES

2 F+S-file

PAGE 01 MOSCOW 08307 031256Z

53

ACTION VOE-00

S

IC

SW

INFO OCT-01 EUR-06 ISO-00 CIAE-00 FBIE-00 INSE-00 NSAE-00

SCI-06 NSF-04 CU-04 CPR-02 USIE-00 SSO-00 /023 W

127643

O 031235Z JUN 74
FM AMEMBASSY MOSCOW
TO SECSTATE WASHDC IMMEDIATE 9361

UNCLAS MOSCOW 8307

E.O. 11652 N/A
TAGS:CVIS UR
SUBJ: VISAS: MICROBIOLOGICAL SYNTHESIS WORKING GROUP: SHERENDEREY

1. VISAS DONKEY DOTS CHIPMUNK SPLEX. ETD JUNE 9. STAY 10 DAYS. *

2. TO PARTICIPATE IN MEETING JOINT AMERICAN-SOVIET WORKING GROUP IN SCIENTIFIC COOPERATION IN MICROBIOLOGICAL SYNTHESIS.

3. BEREZIN, IL'YA VASIL'YEVICH, 9 AUG 1923, ASTRAKHAN', DEAN OF CHEMICAL FACULTY OF MOSCOW STATE UNIVERSITY.

4. MEL'NIKOV, LEV ALEKSANDROVICH, 6 MARCH 1927, VOLGOGRAD. SR. RESEARCHER OF ALL-UNION RESEARCH INST. OF PROTEIN SYNTHESIS OF MAIN ADM. OF MICROBIOLOGICAL INDUSTRY OF USSR COUNCIL OF MINISTERS. VLOB DPT 1.

5. SEREGIN, VLADIMIR IVANOVICH, 3 OCT 1938, LOPUKHOVKA. DEPUTY CHIEF OF TECHNICAL ADM. OF MAIN ADM. OF MICROBIOLOGICAL INDUSTRY OF USSR COUNCIL OF MINISTERS.

6. SHENDEREY, YEVGENIY ROMANOVICH, 27 JULY 1927, KOMMUNARSK. DEPUTY CHIEF OF MAIN ADM. OF MICROBIOLOGICAL INDUSTRY OF USSR COUNCIL OF MINISTERS.

7. SUKHODOLETS, VITALIY VLADIMIROVICH, [illegible] LOPUKHOVKA. DEPUTY DIRECTOR OF ALL-UNION RESEARCH INST. OF GENETICS OF MAIN [illegible] INDUSTRY OF USSR COUNCIL OF MINISTERS.

Microbiology

Department of State TELEGRAM

UNCLASSIFIED

PAGE 02 MOSCOW 08307 031256Z

8. YENIKEYEV, SHAMIL' GARIFOVICH, 25 JUNE 1939, SVERDLOVSK, FACULTY MANAGER OF KAZAN CHEMICAL TECHNOLOGICAL INST. STOESSEL

E.O.E.: New York or Washington

During: June/July

Stay: 12 days, not 10 days as requested in visa message

Sponsor: National Science Foundation - Visit Under US/USSR S and T Agreement

Notes: Itinerary attached

STATINTL

cc: [redacted]

UNCLASSIFIED

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

Department of State

UNCLASSIFIED 9131

PAGE 01 STATE 114949

72
ORIGIN SCI-06

INFO OCT-01 EUR-25 ISO-00 NSF-04 FB-11 COME-00 AEC-11 [illegible]

CIAE-00 INR-10 NSAE-00 RSC-01 AGR-20 CU-04 /096 R

DRAFTED BY SCI/SA:RJNALD:GEN
APPROVED BY SCI/SA:OGANLEY
NSF:JLEWIS
EUR/SOV:RPARDON

116179

R 312206Z MAY 74
FM SECSTATE WASHDC
TO AMEMBASSY MOSCOW

UNCLAS STATE 114949

E.O. 11652: N/A
TAGS: TGEN, OTRA, UR
SUBJECT: S&T AGREEMENT: MICROBIOLOGY

REF: MOSCOW 7660

FOR SCIOCONS

1. FOLLOWING IS BRIEF OUTLINE OF TENTATIVE ITINERARY FOR SOVDEL VISIT; FINAL ARRANGEMENTS NOW IN PROGRESS:

SUNDAY, JUNE 9 - ARRIVE JFK, NEW YORK
- FLY TO WASHINGTON, D.C.

JUNE 10 (MIDDAY) THROUGH JUNE 12 - MEETING OF JOINT
- WORKING GROUP

JUNE 13 - MORNING - VISIT BELTSVILLE (USDA)
- AFTERNOON - FLY TO PHILADELPHIA

JUNE 14 - [illegible] - VISIT UNIVERSITY OF PENNSYLVANIA
- AFTERNOON - SPLIT VISITS TO FERMENTATION
- DESIGN (ALLENTOWN) AND GE

Department of State

UNCLASSIFIED

PAGE 02 STATE 114949

~ (VALLEY FORGE)
~ EVENING ~ FLY TO BOSTON

JUNE 15 ~ VISIT BRANDEIS UNIVERSITY AND MIT
~ FLY TO NEW ORLEANS

~ JUNE 16 ~ FREE

JUNE 17 ~ VISIT LOUISIANA STATE UNIVERSITY
~ (BATON ROUGE)

JUNE 18 ~ FLY TO INDIANAPOLIS

JUNE 19 ~ VISIT ELI LILLY
~ FLY TO WASHINGTON, D.C.

JUNE 20-21 ~ FINAL DISCUSSIONS AND SIGNING OF RECORD

JUNE 21 (EVENING) ~ DEPART WASHINGTON VIA
~ AEROFLOT FOR MOSCOW

2. SOVUEL SHOULD HAVE OPEN AIR TICKETS AS FOLLOWS:
NEW YORK~WASHINGTON~PHILADELPHIA~BOSTON~NEW ORLEANS~
INDIANAPOLIS~WASHINGTON.

UNCLASSIFIED

CABLE SEC DISSEM BY [redacted] PER [redacted]

ADMIN INTERNAL USE ONLY

REPRODUCTION BY OTHER THAN ISSUING OFFICE IS PROHIBITED

PERSON/UNIT NOTIFIED

ADVANCE COPY ISSUED/SLOTTED BY AT Z

STATE MESSAGE

1		4	
2		5	
3		6	

ACTION UNIT

ACTION #

INFO RF. FILE. VR. OCI/SOVI, PS/EGJ

CR/W, OSRV, OPR2, IRS/HRG, [redacted] OSI/PSTD

SBZ, SS3, DCD, DDST2, OSG/ST

T 127738 EIA410 PAGE 01-01 NC 34675

STATSPEC

TOR:220149Z MAY 74

R 211707Z MAY 74
FM AMEMBASSY MOSCOW
TO SECSTATE WASHDC 9031U
BT
UNCLAS MOSCOW 7660
FOR SCI
E.O. 11652: N/A
TAGS: TGEN OTRA UR
SUBJECT: US-USSR S&T AGREEMENT: MICROBILOGY
REF: STATE 100010
1. SHENDEREY HAS JUST RETURNED TO MOSCOW FROM BUSINESS TRIP AND EMBASSY HAS BEEN PROMISED HIS SUGGESTIONS ON PROGRAM THIS WEEK. WE POINTED OUT THAT IT MAY ALREADY BE TOO LATE FOR THE US SIDE TO TAKE HIS PROPOSALS INTO ACCOUNT IN ARRANGING PROGRAM DUE TO SHORTNESS OF TIME REMAINING BEFORE GROUP'S ARRIVAL.
2. SOVIET DELEGATION WILL CONSIST OF SIX INDIVIDUALS: SHENDEREY, YENIKEYEV, MELNIKOV, BEREZIN, SUKHODOLEV AND SEREGIN. FULL NAMES AND TITLES ARE TO BE SUPPLIED WHEN PROGRAM SUGGESTIONS DELIVERED. STOESSEL

[redacted]

info

NATIONAL SCIENCE FOUNDATION
WASHINGTON, D.C. 20550

STATINTL

S&T Bilat
Microbiology
FINE

Deputy Minister E. R. Shenderey
Ministry of Microbiological Industry
U.S.S.R. Council of Ministers
Lesteva 18
Moscow, U.S.S.R.

Dear Dr. Shenderey:

You should, by now, have received our suggested dates for the next meeting of the Joint Working Group and copies of the Working Plans proposed by the Project Coordinators on the U.S. side. We would suggest that the efforts of this next joint meeting be focussed on developing our working plans, setting our project priorities, developing our plan of action for 1974-1975, and agreeing to the details of our future cooperative efforts. (Since we have sent you our Working Plans, we are looking forward to receiving your Working Plans shortly, so that we may be able to review them when the U.S. side meets in the middle of April.)

We would propose to begin the Joint Working Group meeting in the afternoon on Monday of the week of your visit. The afternoon portion could be taken up with introductions, agreeing on an agenda, and having our various project coordinators meet to develop individual project plans. On Tuesday, we would begin formal deliberations. We would hope that by Wednesday afternoon we would have reached a mutual understanding on the text of the record of our joint meeting. Following the completion of the work of the Working Group, your delegation would visit various U.S. laboratories and companies. (A suggested itinerary of such visits will be sent to you shortly.) Then, if necessary, we would meet again before your departure for the signing of the record of our meeting with its associated recommendations to the Joint Commission. I trust this meets with your approval, and we look forward to a prompt reply.

Now that the U.S. Working Group is in the phase of proposing grants to the U.S. Government, and since Dr. Humphrey may be receiving such grants, it was his suggestion that he step aside in favor of a Government employee.

Microbiology

Dr. Stever, U.S. Chairman of the Joint Commission, agreed with Dr. Humphrey, and has appointed him as Co-Chairman, and me as Chairman. Dr. Humphrey will, of course, continue to serve as the U.S. Working Group Coordinator for Instrumentation and Modelling.

Sincerely yours,

Joshua M. Leise
Chairman, U.S. Side of the
Joint Working Group on Production of
Substances by Microbial Means

Arthur E. Humphrey
Co-Chairman, U.S. Side of the
Joint Working Group on Production of
Substances by Microbial Means

NSF:JML:ld

5/5 - Received American Embassy
5/7 - Received Department of State

To Mr. M. Leize
President of the American
Part of the Joint Working
Group for Scientific-Tech-
nical Cooperation in the
Area of Obtaining Substances
by Microbiological Means

[redacted]

Comment ! By
3 June
Ray

STATINTL

Dear Dr. Leize,

Allow me to congratulate you in connection with your appointment by the manager of the American part of the joint working group for scientific-technical cooperation in the area of obtaining substances by a microbiological method and to express assurance in the rapid accomplishment of the preparatory segment of cooperation and its future development.

We have received your proposals relating to the deadlines for carrying out the third session of the joint working group and considering your proposals, we plan to be in the United States from 9- 12 of June, 1974 in order to complete the work of the joint working group and then to begin actuating the program by visiting laboratories and U.S. companies; and likewise, in the event that we need to meet again in order to sign the protocol and make recommendations of the joint commission.

As concerns the projects of the cooperative working programs, they will be sent in the near future.

Taking this opportunity, I ask you to pass on to Professor Humphrey our gratitude for the large amount of work which he has performed as President of the American part of the joint Soviet-American working group.

With best regards,

E. Shenderey

President of the Soviet part
of the working group

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

WORKING PROGRAM

Topic 1: "Development of Technology for Industrial Production and Utilization of Food and Food Proteins by Microbial Means, Including Research Into Different Aspects of Toxicity and Biological Value of Such Products"

for 1974-1977

Coordinators: Dr. Gregorian (USSR)
Dr. Daniel I.C. Wang (USA)

Name or Topic and Divisions	Participants		Duration of task	Forms of Cooperation	Results of Work
	USSR	USA			
1	2	3	4	5	6
I. Assortment and selection of microorganisms of active rich protein producers by the amino acid content for nutrients and food			1974-77		
I.I Selection of bacteria and yeast cultures	Inst. of Biochem. & Physiol. Moscow St. Univ. Inst. of Protein Synthesis	North. Regional Res. Labs MIT U. Wisc.	1974-77	Exchange of strains	Obtaining highly productive industrial strains

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6
Development of a method for comparitive evaluation of strains					
among them					
I.2 Study of possible ways for regulating direct biosynthesis of proteins in order to raise the content of irreplaceable amino acids (methione, cystine, tryptophan, lysine)	Inst. Biochem & Phys. of Microorganisms Inst. of Protein Synthesis	North. Region Res. Labs MIT	1974-77	Exchange of information Joint research	Devel. of methods for selecting strains by raising content of irreplaceable amino acids (1974-75) Devel. of methods of direct synthesis (1976-77)
2. Techno-economical comparison of various kinds of raw materials for microbiological synthesis with econ. analysis			1974-76		
2.I Cultivation of yeast cultures on molasses, ethanol, methanol, hydrocarbon with removal of prognostic techno-econ. characteristics	Inst. of Protein Synthesis	MIT U. Penn.		Exchange of information	Obtaining technical and economical characteristics of technological processes 1976

1	2	3	4	5	6
2.2 Cultivation of bacteria on methanol, ethanol, gas-forming and liquid hydro-carbons of a paraffin line, agricultural and industrial refuse, with removal of techno-econ. characteristics	Inst. of Biochem. & Phys. of Microorgan-isms Inst. of Protein Synthesis	U. of Missouri	1974-76	Exchange of information	Obtaining technical and economical characteristics of technological process (1976)
2.3 Comparitive evaluation of basic characteristics and choice of substrates	Inst. of Protein Synthesis	MIT U.Penn U.Mis-souri	1st stage =1974-75 2nd stage =1976	exchange of info.	1. Devel. of methods of comparitive techno-econ. level-1974 2. Prognostic comparison of techno-econ. analysis for determining raw materials 1st stage- 1974-75 (theor.) 2nd stage- 1976 (specific)
3. Methods of improving separation of protein substances from biomass of a single cell organism					

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6
3.I. Devel. of enzymatic & mechanical methods of protein release	INEOS Inst. of Protein Synthesis	MIT	1974-76	exchange of information execution of joint research	Establish technical and economical feasibility for industrial use
3.2 Release of microbe biomass from protein release - with aid of enzymes - by physical-chemical means	Inst. of Protein Synthesis	MIT	1974-76	exchange of information	Determination and selection of fermentors; devel. and analysis of technological progress- 1975.
4. Devel. of industrial methods for obtaining protein from single-cell microorganisms					Establishment of technical and economical feasibility for industrial use
4.I Apparatus for Cultivation	Inst. of Biotech. Inst. of Protein Synthesis	MIT	1974-76	exchange of information	joint report on projects of industrial enzymes
4.2 Separation of biomass	(same as above)	MIT	1974-76	exchange of information	same as 4.I

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6
4.3 Purifying and Drying	Inst.of Protein Synthesis Inst.of Biotech.	U.of Min-nesota	1974-76	exchange of information	same as 4.I
4.4 Devel. of apparatus for increasing power of purifying biomass	same as above		1974-76	exchange of information	same as 4.I
5. Specialized processing of biomass and separation of protein nutrients from it	INEOS Inst.of Protein Synthesis Acad. of Sci.-Nutri-tion Institute	MIT U.of Minnesota	1975-77	exchange of information	Devel. of process
6. Biological value and harmlessness of single-cell proteins	Acad. of Sci.-Nutrition Inst. USSR	MIT	1974-77	exchange of information	Devel. of unified methods for determining biological value and harmlessness

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

WORKING PROGRAM

ENGINEERING RESEARCH AND DEVELOPMENT OF EQUIPMENT FOR THE COMPUTERIZED SIMULATION, DESIGN AND CONTROL OF PROCESSES FOR MICROBIAL TECHNOLOGY

Coordinators: Dr.Arthur Humphrey, Univ. of Penn.-USA; Sh. Yenikeyev-Kazan Inst.of Chem. Tech.USSR

No.	Name of topic and divisions	Participants USSR	Participants USA	Duration of task	Forms of Cooperation	Expected results
1	2	3	4	5	6	7
I.	Development of methods and new sensors for measuring the significant variables in microbial processes.					
I.I	Joint working conference for developing recommendations for direct research in area of developing sensors	Kazan Inst. of Chemical Tech. (KICT) Inst. of Biotech.	U.of Penn.	one week spring-1975 5 participants ea. from USSR & USA	Conference at U. of PEnn.	Devel. of general report with recommendations for direct research in area of processing new sensors.
I.2	Creation of means for controlled measuring of biomasses (incl. interphase & mathematical guarantee)	KICT Inst.of Biotech.	U.of Penn.	2 yrs. 1975-77	exchange of scientific reports; exchange of 2 collaborators per yr. from ea. country	Devel. of technological documentation and equipment

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
1.3	Creation of means for controlled measuring tech. for measuring activity of microorganisms (incl. interphase & math. guarantee)	KICT Inst.of Biotech.	U.of Penn.	3 yrs.	same as 1.2	same as 1.2
1.4	Creation of means for controlled measuring tech. for measuring cultural environment(incl. interphase and math. guarantee)	KICT Inst.of Biotech.	U.of Penn.	same as 1.2	same as 1.2	same as 1.2
2.	Investigation of processes of mass momentum and heat tranfer in heterogenous gas-liquid-liquid type of cultural condition, and also kinetics and biochemical mechanisms of hydrocarbon uptake by microorganisms.					
2.1	Conference on mechanism of hydrocarbon uptake by microorganism and hydrodynamic theory of cultural environment	KICT Inst.of Protein Synthesis Inst.of Biotech.	U.of Kansas	1 week summer-1975	Conference at Inst.of Protein Synthesis Moscow; 5 participants from ea. country	Devel. of general report on research conditions in this area and delivery of recommendations in directive research.

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
2.2	Devel. of experimental apparatus & completing research in kinetic and biochem. mechanisms of hydrocarbon uptake by microorganisms	Inst.of Protein Synthesis KICT	U.ofPenn. U.of Kansas	2 yrs. 1975-77	Exchange of scientific reports; exchange of 2 collaborators per yr. from ea. country	Devel. of theory and obtaining of experimental information for processing mathematical simulation for biochemical kinetic uptake of hydrocarbons
2.3	Devel. of hydrodynamic theory of heterogenous microbial systems of the gas-liquid-liquid type	KICT	U.of Kansas	2 yrs. 1975-77	exchange of sci. reports; exchange of 1 scientific collaborator ea. yr. from ea. country	Devel. of mathematical simulation for procedure of heterogenous cultural environment
2.4	Devel. of experimental apparatus and obtaining data for creation of hydrodynamic simulation of heterogenous fermentation in gas-liquid-liquid system	KICT Inst.of Biotech. Inst.of Protein Synthesis	U.of Kansas U.ofPenn.	2 yrs. 1975-77	exchange of sci. reports; exchange of 2 scientific collaborators from each country	Experimental data necessary for mathematical simulation of cultural environment

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
3	Research on population dynamics of microorganisms					
3.1	Conference on specific directives for theoretical and experimental work	KICT Inst.of Biotech.	U.of Kansas	1 week fall,1975	Conference at U.of Kansas; 5 participants ea. from USSR and USA	Summarized report on the problem
3.2	Devel. of structural theory and population dynamics in uninterrupted fermentation	KICT	U.of Kansas	2 yrs. 1975-77	exchange of sci. reports; exchange of 1 scientific collaborator from each country	Devel. of math. simulation of population dynamics of microorganisms
3.3	Devel. of experimental equipment and obtaining data to create models of population dynamics of microorganisms	KICT Inst.of Biotech. Inst.of Protein Synthesis	U.of Penn. U.of Kansas	2 yrs. 1975-77	Exchange of sci. reports; exchange of 2 scientific collaborators each year	Experimental data for math. simulation of population dynamics of microorganisms

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
4	Development of Engineering Techniques for Optimal Design of Industrial Scale Fermentor and Automatic Control of Industrial Fermentation Processes.					
4.1	Conference on summarized results of topics 1,2,3 according to these aspects: 1. theory & math. simulation of fermentation process of hydrocarbons 2. Structure of demonstrated system of fermentation, controlled by computer	KICT Inst.of Biotech. Inst.of Protein Synthesis	U.of Penn. U.of Kansas MIT New Brunswicke Scientific	1 month summer-1977	Conference at Inst. of Protein Synthesis; 10 participants from ea. country	Summarized report on research results of topics 1,2,3; Tech. task on project of demonstrating fermentation systems, controlled by computer
4.2	Development and Research of math. simulation on fermentation process of hydrocarbons	KICT Inst.of Biotech.	U.of Penn. MIT U.of Kansas	1 yr. 1977-78	exchange of research results exchange of 2 sci. collaborators from ea. country	Devel. of math. simulation applicable for optimal construction; automatic management of fermentation process on hydrocarbons

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
4.3	Devel. of Engineering techniques for optimail constructing of industrial scale fermentor	KICT Inst.of Biotech. Inst.of Protein Synthesis	U.of Penn. U.of Kansas	1 yr. 1978-79	Exchange of research results exchange of 2 sci. collaborators from ea. country	Devel. of optimal constructing of industrial scale fermentor for production of single-cell proteins from hydrocarbons
4.4	Devel. of automatic techniques for controlling industrial fermentation processes with computer control	KICT Inst.of Biotech.	U.of Penn. MIT	1 yr. 1978-79	Exchange of research results exchange of 2 sci. collaborators from ea. country	Math. guarantee for computer-controlled fermentation processes
5.	Design and Structure of a Practical System for Controlling Fermentation Process in order to produce Single-Cell Protein from Hydrocarbons.					
5.1	Conference on coordination of project work	KICT Inst.of Biotech. Inst.of Protein Synthesis	U.of Penn. MIT New Brunswicke Scientific	2 weeks spring 1978	Conference at New Brunswicke Scientific Farm	Specification of technical task on the design and devel of equipment; decisions on organizational questions

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
5.2	Design, Preparation and Assembly of Fermentor, computer controlled	KICT Inst.of Biotech. Inst.of Protein Synthesis	New Brunswicke Scientific MIT U.of Penn.	2 yrs. 1978-80	Exchange of visits for consultations on design and construction of apparatuses	optimally designed fermentor with computer control
5.3	Demonstration in USSR of optimal management process for obtaining single-cell protein with aid of a computer	KICT Inst.of Biotech. Inst.of Protein Synthesis	New Brunswicke Scientific U.of Penn. MIT	a month summer,1980	lectures by leading developers	optimal processes for obtaining single-cell protein from hydrocarbons.
6.	Joint Writing and Publishing of Book on Simulation, Design and Control of Fermentation Systems with the Aid of a Computer					
6.1	Meeting to discuss plans of book	Yenikeyev KICT Inst.of Biotech.	Humphrey U.of Penn.	spring,1975, during meeting on topic 1.1	agreement on composition by all authors	annotations and plan of book by chapters

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
6.2	Writing of Separate Chapters	authors	authors	3 yrs. 1975-78	exchange of chapters and critical analysis	manuscript of book
6.3	Editing and Publishing of book	Yenikeyev KICT	Humphrey U.of Penn.	1 yr. 1978-79	editing book in Russian and English	jointly published book

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

WORKING PROGRAM NO. 3

MOLECULAR BIOLOGY OF INDUSTRIAL ORGANISMS

Coordinators: S. Alikhanian(USSR),H. HAlvorson and V. Brown (USA)

No.	Name of topic and divisions	PARTICIPANTS		Duration of task	Forms of Cooperation	Expected Results
		USSR	USA			
1	2	3	4	5	6	7
I.	Development of genetic methods for improving industrial microorganisms based on approaches of molecular biology			1975-78		
I.I.	Conference on new techniques for selecting industrial organisms	Inst. of Genetics	Brandeis U. Squibbs, INc.	1975 5 days	Conference in USA;5 participants from ea. country	Exchange of information
I.2	Development of program of joint research on genetic engineering	Inst.of Biochem.& Physiology (Acad. of Sciences) Inst.of Genetics	Stanford U.	1975-76 3-4 days	Conference in USA; 5 participants from USSR	Exchange of information
I.3	Development of techniques for improving activity of fermentor-producers on model of microorganisms decomposing cellulose	Inst. of Genetics	Laboratory in Natick, Mass.	1975-76	exchange of information and strains	Improving productivity of strains & producers of cellulose

1	2	3	4	5	6	7
2	Development of techniques for genetic analysis of microorganisms for insect control			1974-78		
2.1	Development of joint research programs	Inst. of Genetics	Northern Regional Labs in Peoria,Ill. U.of Wisc. U.of Mich.		Conference in USA; 5 Soviets and 20 Americans	Exchange of information
2.2	Genetic study of toxin forming processes and spore formations by Bacillus thuringiensis	Inst. of Genetics	Northern Regional Labs in Peoria, Ill.	1975-76	joint research exchange of scientists	Increasing productivity of strain by toxin formation
2.3	Development of methods of genetic analysis based on the study of interrelations	Inst.of Genetics	Brandeis U.	1975-77	joint research exchange of scientists	Development of methods of genetic analysis of Bacillus with use of viruses =
3	Development of genetic methods for improving industrial strains utilizing hydrocarbons, oil, methanol, and other sources of raw materials			1975-78		

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
3.1	Development of joint research programs on hydrocarbon utilization of yeasts	Leningrad State Univ.	U.of Calif. at Berkeley	1975	Conference in Leningrad; 5 US participants and 10 from USSR	Exchange of information
3.2	Study of genetic control systems on uptake of hydrocarbons of yeasts	Inst.of Genetics	U.of Calif.	1975-78	Devel. of joint program; exchange of information & strains; exchange of scientists	Improvement of technical properties of industrial strains
3.3	Study of mutibility and genetic control of productive traits (composition of biomass, separation of organic acids,etc.)	Inst.of Genetics	U.of Calif.	1975-78	Devel. of joint programs;joint publications; exchange of scientists	Determination of perspective directions in selecting industrial strains
4	Development of techniques of genetic analysis and microorganism-producers of amino acids and various metabolites			1975-77		

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
4.1	Development of genetic methods for creating strains for amino acids and other products of microbial synthesis	Inst.of Genetics	U.of Chicago	1975-77	Joint research exchange of scientists	Creation of new methods of genetic strains and various metabolites
5	Conference on results of cooperative program fulfillments	Inst.of Genetics	Brandeis U.	1979	Conference in USA or USSR	Publication of book according to results of conference

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

WORKING PROGRAM

PROJECT 4 : "Development of Ways to Produce and Apply Enzymes for Industrial and Analytical Goals"

for 1974-1980

Coordinators: I. Berezin, K.Kalunyants (USSR); G.T. Tsao (USA)

No.	Working task, topic	Organizations-Participants		Duration of task	Forms of Cooperation	Expected results
		USSR	USA			
1	2	3	4	5	6	7
I.	Search and obtaining of strains of microorganisms producing determinant enzyme systems, including systems categorized by hydrolysis, glycoside bonds, oxidation of hydrocarbons; study of conditions instrumental to biosynthesis of maximally possible quantities of enzymes	Inst.of Biotech. at Moscow State Univ.	N.S.F. grantees	1974-80	Joint research program;exchange of strains and information; dev. of united ways of testing; joint symposiums within the program	Finding highly productive strains of microorganisms & devel. of technology
I.I	Selections of microorganisms and enzyme producers	Inst.of Biotech. at Moscow State Univ.	N.S.F. grantees	1974-80	Exchange of strains & their analysis	Finding highly productive strains of microorganisms
I.2	Study of microbial physiology, assortment of culture mediums; devel. of optimal conditions for their cultivation, guaranteeing improvement in biosynthetic activity	Inst.of Biotech. at Moscow State Univ.	N.S.F. grantees	1974-80	Joint research program ; exchange of information; joint symposiums within program	Devel. of technology; cultivation guaranteeing maximum biosynthesis of enzymes
2.	Development of methods for preparing and wide-scale separating and purifying of necessary enzymes, including systems categorized by hydrolysis, glycoside bonds and oxidation of hydrocarbons.	Inst.of Biotech. at Moscow State Univ.	N.S.F. grantees	1974-1980	Joint research program;exchange of information & documentation; joint consultations within program	Devel. of effective processes & equip. for processing & separating & purifying enzymes on industrial scale

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
2.1	Determination of optimal conditions for separating enzymes	Inst.of Biotech. at Moscow State U.	N.S.F.grantees	1974-80	same as 2	Finding optimal conditions for separating enzymes
2.2	Development of technical process for separating enzymes	same as above	same as above	1974-80	same as 2	Devel. of technology for separating enzymes
2.3	Development of technical process for purifying enzymes	same as above	same as above	1974-80	same as 2	Devel. of technology for purifying enzymes
2.4	Development of methods for stabilizing enzymes	Inst.of Biotechnology	same as above	1974-80	same as 2	Recommendations of ways for stabilizing enzymes
2.5	Design of industrial equipment	Inst.of Biotechnology	same as above	1974-80	same as 2	Devel. of industrial equipment for separating and purifying enzymes
3	Development of methods for obtaining technological production of immobilized enzymes; research on properties of immobilized enzymes	Inst.of Biotechnology at Moscow St. Univ; TPI; Acad.of Sci. USSR	same as above	1974-80	Joint research program;exchange of information & preparations; joint execution of research & consultations, symposiums	Devel. of new ways of enzyme immobiliztion and industrial processes of their production; creation of theoretical basis of activity of immobilized enzymes

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
3.1	Choice of carriers and methods of immobilizing enzymes	Inst.of Biotechnology Moscow State Univ.;TPI; Acad.of Sci. USSR	NSF grantees	1974-80	same as 3	Choice of optimal carriers and methods of immobilization
3.2	Development of methods for immobilization of multienzymes and/or cofactor systems	Inst.of Biotechnology Moscow State Univ; Acad. of Sciences,USSR	same as above	1974-80	same as 3	Devel. methods of immobilization of multienzymes and/or cofactor systems
3.3	Development of theoretical and experimental processes catalyzed by immobilized enzymes	Inst.of Biotechnology Moscow State Univ.; TPI; Acad. of Sci. USSR	same as above	1974-80	same as 3	Creation of theoretical and experimental processes catalyzed by immobilized enzymes
3.4	Development of technological processes and equipment for producing immobilized enzymes	Inst.of Biotechnology TPI	same as above	1974-80	same as 3	Creation of technology and apparatus for producing immobilized enzymes
4	Diagnostic and Analytical Uses of enzymes; including immobilized enzymes	Moscow State University	same as above	1974-80	Joint research program;exchange of information Joint consultations within program	Devel. new diagnostic & analytical methods
4.1	Enzyme-immunity analysis	Moscow State University	same as above	1974-80	same as above	Creation of methods for enzyme-immunity analysis
4.2	Development of enzyme methods for detecting faint light or sound	Moscow State University	Univ. of Pennsylvania	1974-80	same as above	Creation of light and sound sensitive materials/

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
4.3	Development of enzyme electrodes and methods of analyzing their use	Moscow State University	NSF grantees	1974-80	same as 4	Creation of enzyme-electrodes and analytical methods of their use
5	Creation of scientific bases; devel. of tech. processes and equipment for enzymatic transmutation of substances	Inst.of Biotechnology Moscow State University	same as above	1974-80	Joint research program and exchange of information, documentation and preparations; joint consultations and symposiums within the program	Devel. of new tech. processes and equipment for obtaining enzymes;their use in agriculture
5.1	Production of sugar from cellulose	same as above	Univ.of California at Berkeley	1974-80	same as above	Creation of enzyme catalysts; devel. of tech. and equipment for obtaining sugar from cellulose
5.2	Production of fermentable sugars from starch and agricultural wastes	Inst.of Biotechnology	same as above	1974-80	same as above	Creation of enzyme catalysts; devel, of tech. and equipment
5.3	Enzyme production of milk substitutes	Inst.of Biotechnology	same as above	1974-80	same as above	Creation of enzyme catalysts; devel. of tech. and equipment

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
5.4	Obtaining of amino acid by enzymatic cleavage of protein waste products	Inst.of Biotech. Moscow St. Univ.;Acad. of Sciences USSR	Coring Glass	1974-80	same as 5	Creation of enzyme catalysts;devel. of tech. and equipment
5.5	Obtaining oxygen-containing products by enzyme oxidation of hydrocarbons	Inst.of Biotechnology Moscow State University	NSF grantees	1974-80	same as 5	Creation of enzyme catalysts; scientific basis for technology

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

WORKING PROGRAM

MICROBIOLOGICAL CONTROL OF PESTS
IN AGRICULTURE

Coordinators: O. Alioshina (USSR) and A. Heimpel (USA)

No.	Name of topic and divisions	Participants		Duration of task	Forms of Cooperation	Expected Results
		USSR	USA			
1	2	3	4	5	6	7
I.	Sporulation of Milky Disease Bacteria			1974-76		
I.I.	Exchange of publications and bacterial cultures	Nat'l. Acad. of Science Inst.of Microbiology Armenia,SSR	Cornell Experimental Station; Agricultural Station,Beltsville,Maryland		Exchange of information	Establishment of virulent strains for further work
I.2	Development of research plans	same as above		1974 3 days	Meeting in USA;6-7 participants from ea. country	Exchange of information

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
2.1	Exchange of cell lines and publications	Inst.of Molecular Genetics Inst.of Bacterial Preparations	Ohio State Univ.; Agricultural St. Beltsville, Maryland	1974-75	meeting in USSR; 6 participants from ea. country	Exchange of information
2.3	Research on problems	same as above	same as above	1974-76	Joint research meeting in USA	Devel. of methods for obtaining & preserving viruses
2.4	Report summary			1976		Recommendations for report summary
3	Development of a Single Standardized System and Evaluation of Bacterial and Virulent Qualities of Entomopathogenic Preparations					
3.1	Research program	Inst.of Microbiology Nat'l. Acad.of Sciences, Armenia,SSR		1975-78	Symposium on methods of standardization USSR-1975 10-12 participants from USSR and 8-10 from USA	Discussion on Standardization methods; selection of optimal method

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4

1	2	3	4	5	6	7
3.2	Execution of research	Inst.of Bacterio-logical Preparations Inst.of Microbiology Armenia,SSR		1975-77	Exchange of information as a result of research	Joint publication of research results; recommendations for standardized methods of analysis
3.3	Joint verification of recommended methods			1978	Execution of joint verification of recommended methods	Instruction on use of standardized methods

Approved For Release 2001/08/27 : CIA-RDP79-00798A000400100009-4